REMARKS

In response to the Office Action dated December 8, 2004, Applicant respectfully requests reconsideration and withdrawal of the rejections of the claims.

Claims 1-14, 16-26 and 28 were rejected under 35 USC § 102, on the grounds that they were considered to be anticipated by the newly-cited Fletcher et al patent (US 6,009,274). Claims 15 and 27 were rejected under 35 USC § 103 as being unpatentable over the Fletcher patent in view of the Collins, III et al patent (US 6,138,153). For the reasons presented below, it is respectfully submitted that the Fletcher patent neither anticipates, nor otherwise suggests, the claimed subject matter, whether considered by itself or in combination with the Collins patent.

The claims are directed to a model-based approach to the provisioning and configuration of software on network devices, such as servers. In this approach, a model of the software components installed (or to be installed) on a device, along with the operating parameters for the software, e.g. port settings, communication protocols, etc., is stored for each different device having a different respective set of software and/or configuration of operating parameters. Subsequently, when a given device is to be provisioned, or reconfigured, the model for that device is retrieved and data from the model is pushed out to the device. That data may cause the device to reconfigure operating parameters on software that is already installed, and/or retrieve new software to be installed and configured.

One of the particularly advantageous features of this approach is that it supports the automated provisioning of devices in a complex heterogeneous environment. For instance, an AIX server can have many hundreds of file sets installed, and a Linux server can have

many hundreds of RPM packages installed. Furthermore, even if two different web sites employ the same type of server, the particular set of software installed on each will be different. The model-based approach of the present invention enables each individual server configuration to be automatically provisioned and updated without affecting any of the others.

The automatic software update technique of the Fletcher patent does not provide the same features. Rather, it describes a system that is designed for a homogeneous, or nearly homogeneous, set of end systems. In operation, an ASU server uses multicast advertisements to identify the latest version of available software components. As stated at column 10, lines 33-35, "the ASU server sends out a multicast advertisement to *all* agents in its domain every polling interval," (emphasis added). Upon receiving such an advertisement, each agent determines whether it has the latest version of the component. If not, it returns a request for that version of the component.

It can be appreciated that this type of operation may be suitable in a situation where all of the end systems are running the same, or nearly the same, set of programs. It is not practical, however, in a heterogeneous environment where different devices may be provisioned with entirely different sets of software, or have different software configurations. A broadcast would be sent out to *every* device each time a software component is updated, including those that have no need for that component. This would lead to unacceptable overhead in any complex system in which each server might have hundreds of files that differ from those of another server.

It is respectfully submitted that the system described in the Fletcher patent does not anticipate the subject matter recited in the pending claims. First, the patent does not

describe a model-based approach in which a model is stored in a database for each different type of device having a different respective set of software and/or configuration of operating parameters. Rather, the ASU server of the Fletcher patent merely contains a table that lists all of the available software components. These components are associated with all of the agents in the system. See table 306 in Figure 5. There is no disclosure of different devices having different respective configurations for software and/or operating parameters, let alone the storage of a respective model for each in a database. Nor is there any disclosure that data from a given model is transmitted to only those devices associated with that model. As noted above, in the system of the Fletcher patent the version information is broadcast to all the devices in the system.

In addition, with reference to claim 1, the Fletcher patent does not disclose the storage of a model containing operating parameter values for software components, nor the use of such data by the agents to manipulate operating parameters of software components on the devices. In connection with this claimed subject matter, the Office Action refers to Fletcher's teaching of an agent recognizing a poll packet from a server and determining if a newer version of a software component is required. This teaching has nothing to do with the *manipulation*, e.g. changing the value of, an *operating parameter* of an installed software component. The Fletcher patent does not contain any disclosure relating to the setting of operating parameters for installed components. It is only concerned with whether an end system has the latest *version* of a component, not how it is configured.

For at least these reasons, therefore, it is respectfully submitted that the Fletcher patent does not anticipate claims 1 and 17, nor their dependent claims.

Furthermore, a number of the specific features of the invention, recited in the dependent claims, are neither disclosed nor suggested by the references. For instance, claims 3 and 18 recite that the messages are transmitted by means of a gateway that provides an interface between the database and the devices. These claims further recite that messages are converted in the gateway from a first protocol associated with the database to a second protocol employed by the devices. In rejecting these claims, the Office Action refers to the bridge 63 of the Fletcher patent as the claimed gateway, and goes on to identify column 1, lines 29-40 and column 1, line 66 to column 2, line 30 as allegedly disclosing a conversion function. It is not seen how this disclosure can be interpreted to suggest the claimed subject matter. There is no disclosure of *converting* messages in the bridge 63 from a *first* protocol associated with the database to a *second* protocol employed by the devices. It is not clear from the Action what is considered to be the first protocol or the second protocol in the Fletcher patent. More importantly, the Action does not indicate how the patent can be interpreted to teach that conversion between two such protocols takes place within the bridge 63.

Claims 4, 5, 19 and 20 recite specific protocols that are employed by the devices. In rejecting these claims, the Office Action refers to Fletcher's disclosure of RMON. This disclosure does not teach the use of remote procedure calls, as recited in claims 4 and 19. Rather, RMON is an acronym for remote *monitoring*. It has nothing to do with the use of remote *procedure calls*, i.e. a semantic mechanism for communicating with the agents. In particular, it does not suggest the use of XML-RPC, as recited in claims 5 and 20.

Claim 6 recites the step of recognizing a change in the configuration of one of the devices, and modifying the model in accordance with such a change. In rejecting this

claim, the Office Action refers to the Fletcher patent at column 5, lines 29-31. This portion of the patent states that agent *responses* are stored in a database of the ASU server. This stored information is not based upon *changes* that have occured in the configuration of a user computer. Rather, it is an indication of software that is *needed* by the agent to bring it up to date. In other words, in the context of claim 6 the change in the device occurs first, and the model is then updated to record this change. On the other hand, in the Fletcher patent the change is first recorded, and then the software is sent to the agent to effect the change.

Claims 9-14 and 21-26 pertain to the classification of software components into multiple roles. For instance, as illustrated in Figure 8 of the application, and recited in claims 12-14, the software components can be classified into an operating system role, an application role and a content role. In rejecting the claims, the Office Action again refers to the Fletcher patent at column 8, lines 62-63, column 10, lines 19-51, column 12, lines 57-67 and column 13, lines1-10. These portions of the patent do not contain any teaching of the management of software by classifying it into different roles, particularly roles that are based upon the probable frequency with which their respective components are likely to be changed. At best, they only disclose that the software is loaded into a special directory at the end system when it is received by the agent, as part of the update procedure. There is no indication that the software components are classified into different groups, let alone how those groups might be organized.

Claims 16 and 28 recite that the agents installed on the devices have a level of authority that enables them to manipulate operating system software installed on the devices. The rejection of these claims refers to the ASU Manager disclosed in the Fletcher
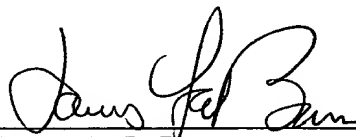
patent. This application provides a user interface to the ASU servers. It has nothing to do with the *agents* executing on the end systems, let alone the level of authority of such agents. In particular, it does not suggest that an agent should have root level authority, i.e., the ability to manipulate operating system software.

Claims 15 and 27 recite the use of a command queue for transmitting messages from the database to the devices. The rejection of these claims relies upon the Collins, III patent, particularly its disclosure of including installation commands with the package of software to be installed. It is respectfully submitted that this disclosure is distinctly different from the subject matter recited in claims 15 and 27. The Collins, III patent teaches that the installation commands should all be provided, together with the software component, to the receiving computer as part of a single package. In contrast, claims 15 and 27 recite that the commands are stored in a queue *at the database*, and provided to the agent one at a time. The Collins, III patent does not suggest the use of a command queue, particularly one that operates in the particular manner recited in the rejected claims.

For the foregoing reasons, it is respectfully submitted that all pending claims are patentable over the applied references. Reconsideration and withdrawal of the rejection is respectfully requested.

Respectfully submitted,
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Date: May 9, 2005

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